

Catalogue of the Type Specimens of Amphibians and Reptiles in the Herpetological Museum of the Chengdu Institute of Biology, Chinese Academy of Sciences: V. Viperidae (Reptilia, Serpentes)

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Abstract In China, there are about 37 species of vipers belonging to 12 genera in the family Viperidae. In the Herpetological Museum of the Chengdu Institute of Biology (CIB), Chinese Academy of Sciences, the type specimens of snakes represent seven species in four genera. As a series of reports on the type specimens of Amphibians and Reptiles deposited in the Herpetological Museum of CIB, this paper focuses on the venomous snake family Viperidae in the collections at this Museum.

Keywords snake, type specimen, Viperidae, China, taxonomy

As a series of reports on the type specimens of Amphibians and Reptiles deposited in the Herpetological Museum of the Chengdu Institute of Biology (CIB), Chinese Academy of Sciences (CAS), this paper will focus on the serpent family Viperidae. The Viperids are advance snakes under the Serpentes. There are currently 12 genera and 37 recognized species in China (Uetz and Hošek, 2015). In the CIB collection, the type specimens of Viperidae belong to seven species in four genera.

In recent years, Asian pit vipers attracted many herpetologists to study their systematics, biogeography and evolution, and considerable work has been published on the topic (e.g. Malhotra and Thorpe, 2004; Guo *et al.*, 2007; Malhotra *et al.*, 2011). Ongoing studies based on more extensive sampling, allowed several new taxa to be described successively (e.g. Guo and Wang, 2011; Yang *et al.*, 2011). In order to benefit the scientists interested in the systematics of this group, it is necessary to provide a list of the type specimens in the museum, and some of the Amphibian and Reptile type catalogues have already

been published (e.g. Guo *et al.*, 2012; Xiong *et al.*, 2012). Some data on body dimension and scalation characters are also provided (Tables 1–5). The abbreviations used in the tables are: SVL: snout-ventral length; TL: tail length; SPL: supralabial; IFL: infralabial; DS: Dorsal scale; VS: Ventral scale; SC: Subcaudal scale.

Gloydus shedaoensis (Zhao, 1979)

Published name: *Agkistrodon shedaoensis* Zhao, 1979. Acta Herpetol Sin, Chengdu, [old ser.], 1(1): 4–6.

Holotype: CIB 012816 (formerly CIB 79I0005), Male. (Figure 1)

Type locality: Snake Island, Lüshun, Liaoning Province, China.

Distribution: Snake Island, Lüshun, Liaoning Province, China

Other specimens (43): Snake Island, Lüshun, Liaoning (CIB series 012817–46, 012952, 072426, 072550, 078098–99, 083863–70).

Ovophis monticola zhaokentangi Zhao, 1995

Published name: *Ovophis monticola zhaokentangi* Zhao, 1995. Sichuan J Zool, Chengdu, 14(3): 109.

Paratype: CIB 740003, Male; Pianma, Lushui Co., Yunnan Province; 1980 m; 3. 17, 1974.

Comments: This specimen is unaccounted for loss in the CIB collection. Malhotra *et al.* (2011) synonymized *O.*

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Table 1 The body dimension and measurement of the type specimens of *Ovophis zayuensis*.

| Specimens | Locality | Sex | SVL | TL | SPL | IFL | DS | VS | SC |
|-----------|---------------|-----|-----|-----|-----|-------|----------|-----|----|
| CIB013375 | Chayu, Xizang | ♂ | 563 | 100 | 9 | 9 | 23-23-19 | 175 | 53 |
| CIB013376 | Chayu, Xizang | ♀ | 570 | 100 | 10 | 11/13 | 24-23-19 | 174 | 52 |
| CIB013377 | Chayu, Xizang | ♂ | - | - | 9 | 9/10 | 24-23-19 | - | - |

Table 2 The body dimension and measurement of the specimens of *Protobothrops mangshanensis* (from Zhao *et al.*, 1998).

| Specimens | Locality | Sex | SVL | TL | SPL | IFL | DS | VS | SC |
|------------|-----------------|-----|-----|----|-----|-------|----------|-----|----|
| CIB 098485 | Mangshan, Hunan | J | 310 | 60 | 8 | 14/15 | 25-25-17 | 196 | 58 |
| CIB 013330 | Mangshan, Hunan | J | 379 | 65 | 7 | 15/14 | 25-25-17 | 195 | 60 |
| CIB013331 | Mangshan, Hunan | J | - | - | 7 | 14 | 25-25-17 | 188 | 66 |
| CIB013332 | Mangshan, Hunan | J | - | - | 7/8 | 13 | 25-25-17 | 187 | 63 |
| CIB013333 | Mangshan, Hunan | J | - | - | 7 | 14/13 | 25-25-17 | 193 | 63 |
| CIB013334 | Mangshan, Hunan | J | - | - | 7 | 13/15 | 25-25-17 | 198 | 62 |
| CIB013335 | Mangshan, Hunan | J | - | - | 7 | 13/14 | 25-25-17 | 195 | 61 |
| CIB013336 | Mangshan, Hunan | J | - | - | 8/7 | 14 | 25-25-17 | 188 | 67 |
| CIB013337 | Mangshan, Hunan | J | - | - | 7 | 14 | 25-25-17 | 193 | 67 |
| CIB013338 | Mangshan, Hunan | J | - | - | 7 | 14 | 25-25-17 | 187 | 64 |

Table 3 The body dimension and measurement of the type specimens of *Protobothrops xiangchengensis* (from Zhao, Jiang and Huang, 1978).

| Specimens | Locality | Sex | SVL | TL | SPL | IFL | DS | VS | SC |
|-----------|---------------------|-----|-----|-----|-----|-------|----------|-----|-----|
| CIB013916 | Xiangcheng, Sichuan | ♂ | 520 | 90 | 7 | 13/12 | 23-25-17 | 189 | 59 |
| CIB013917 | Xiangcheng, Sichuan | ♀ | 815 | 135 | 8 | 11/13 | 25-25-17 | 192 | 59 |
| CIB013918 | Xiangcheng, Sichuan | ♀ | 600 | 125 | 7 | 12 | 25-25-17 | 191 | 66 |
| CIB013919 | Xiangcheng, Sichuan | ♀ | 750 | 120 | 8 | 13/11 | 24-25-17 | 194 | 56 |
| CIB013920 | Xiangcheng, Sichuan | ♀ | - | - | 8 | 12/14 | 25-26-17 | 192 | - |
| CIB013921 | Xiangcheng, Sichuan | ♂ | 757 | 123 | 7 | 11/12 | 25-25-17 | 194 | 59 |
| CIB013924 | Jiulong, Sichuan | ♀ | 647 | 113 | 10 | 12/13 | 23-25-17 | 182 | 52 |
| CIB013925 | Jiulong, Sichuan | ♀ | 709 | 115 | 8 | 12 | 21-24-17 | 184 | 49 |
| CIB013926 | Jiulong, Sichuan | ♀ | 630 | 100 | 9 | 12 | 23-25-17 | 190 | 51 |
| CIB013927 | Jiulong, Sichuan | ♀ | 675 | 100 | 9 | 13 | 23-25-17 | 188 | 48+ |
| CIB013928 | Jiulong, Sichuan | ♀ | 618 | 109 | 9 | 13 | 23-25-17 | 190 | 57 |
| CIB013929 | Jiulong, Sichuan | ♀ | 670 | 110 | 8 | 12 | 23-23-17 | 193 | 55 |
| CIB013930 | Jiulong, Sichuan | ♂ | 568 | 112 | 8 | 12 | 23-25-17 | 177 | 54 |
| CIB013931 | Jiulong, Sichuan | ♀ | 640 | 90 | 8 | 12 | 23-24-17 | 189 | 46 |
| CIB013932 | Jiulong, Sichuan | ♂ | 590 | 120 | 8 | 11 | 23-23-19 | 180 | 59 |
| CIB013933 | Jiulong, Sichuan | ♀ | 580 | 100 | 8 | 12 | 23-25-18 | 184 | 52 |
| CIB013934 | Jiulong, Sichuan | ♂ | 665 | 135 | 8 | 12 | 23-25-17 | 180 | 61 |
| CIB013935 | Jiulong, Sichuan | ♂ | 645 | 135 | - | - | 23-25-17 | - | - |
| CIB013937 | Jiulong, Sichuan | ♀ | 780 | 100 | 8 | 11/12 | 23-25-17 | 188 | 53 |
| CIB013938 | Jiulong, Sichuan | ♀ | 670 | 120 | 9 | 11/12 | 23-25-19 | 188 | 61 |
| CIB013939 | Jiulong, Sichuan | ♀ | 625 | 110 | 9/8 | 12 | 23-24-17 | 191 | 59 |
| CIB013940 | Jiulong, Sichuan | ♀ | 655 | 105 | 9/8 | 12 | 23-24-17 | 185 | 53 |
| CIB013941 | Jiulong, Sichuan | ♀ | 680 | 110 | - | - | - | 190 | 52 |
| CIB013942 | Jiulong, Sichuan | ♀ | 620 | 110 | 8 | 10/12 | 23-23-17 | 190 | 54 |
| CIB013943 | Jiulong, Sichuan | ♀ | 580 | 100 | 8/9 | 12 | 23-23-17 | 185 | 49 |
| CIB013944 | Jiulong, Sichuan | ♀ | 685 | 115 | 9 | 13/11 | 24-25-19 | 186 | 59 |
| CIB013945 | Batang, Sichuan | ♂ | 894 | 166 | 9 | 13 | 23-25-17 | 197 | 58 |
| CIB013947 | Jiulong, Sichuan | ♀ | - | - | 9 | 12 | 24-25-17 | 187 | - |
| CIB013948 | Jiulong, Sichuan | ♀ | 695 | 120 | 10 | 13 | 23-25-17 | 188 | 58 |
| CIB013949 | Jiulong, Sichuan | ♀ | 645 | 115 | 8/9 | 11/13 | 23-24-18 | 185 | 55 |

monticola zhaokengtangi with *O. zayuensis*.

***Ovophis zayuensis* (Jiang, 1977)**

Published name: *Trimeresurus monticola zayuensis* Jiang, 1977 in Zhao E. M. and Jiang Y. M. 1977. Acta Zool Sin, Peking, 23(1): 64–71.

Holotype: CIB 013375 (formerly CIB7315024), Male. (Figure 2)

Type locality: Chayu Co., Xizang AR, China.

Allotype: CIB 013376, Female.

Other specimens (1): Chayu Co., Xizang (CIB 013377).

Distribution: Xizang (Chayu and Motuo), Yunnan (Gongshan), China.

Comments: Zhao (1995) elevated this taxon to a full species. Malhotra *et al.* (2011) synonymized *O. monticola zhaokengtangi* with *O. zayuensis*.

***Protobothrops mangshanensis* (Zhao, 1990)**

Published name: *Trimeresurus mangshanensis* Zhao E. M. in Zhao E. M. and Chen Y. H. 1990. Sichuan J Zool. Chengdu, 9(1): 11–12.

Noetype: CIB 098485, Juvenile male (Figure 3)

Type locality: Pingkeng, Mt. Mang, Yizhang Co., Hunan Province, China; 700–900 m.

Paratype: CIB 013330, Juvenile.

Distribution: Hunan and Guangdong Province, China

Other specimens (9): Yizhang Co., Hunan Province, China (CIB series 01331–38, 078632).

Comments: The holotype has been got lost, thus Guo *et al.* (2012) designated a noetype for this species. This species is currently listed as Endangered (EN) under IUCN Red List Criteria (IUCN, 2012).

***Protobothrops xiangchengensis* (Zhao, Jiang and Huang, 1978)**

Published name: *Trimeresurus xiangchengensis* Zhao, Jiang and Huang, 1978. Mater Herpetol Res, Chengdu, 4: 21.

Holotype: CIB 013918 (formerly CIB725050), Male. (Figure 4)

Type locality: Qianjing Town, Xiangcheng Co., Sichuan Province, China.

Allotype: CIB 013921, Female.

Distribution: Western Sichuan and Yunnan, China.

Other specimens (77): Xiangcheng Co., Sichuan (CIB series 013916–17, 013919–20, 013922–23, 072443); Jiulong Co., Sichuan (CIB series 01392–35, 013937–44, 013946–49, 097452–55); Kangding Co., Sichuan (CIB 013936); Batang Co., Sichuan (CIB 013945); Xiaojing Co., Sichuan (CIB 072442); No detail locality (CIB series 083934–72).



Figure 1 Dorsal (A) and ventral (B) views of the holotype of *Gloydius shedaoensis* (Zhao, 1979) (CIB 012816).



Figure 2 Dorsal (A) and ventral (B) views of the holotype of *Ovophis zayuensis* (Jiang, 1977) (CIB 013375).

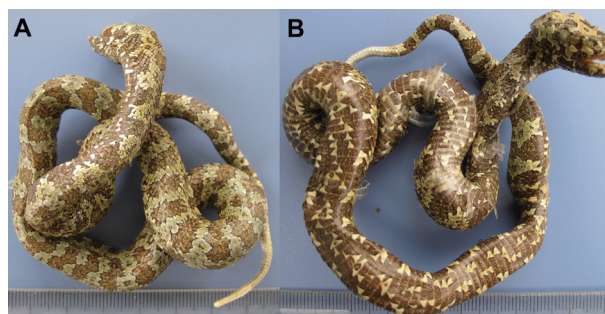


Figure 3 Dorsal (A) and ventral (B) views of the holotype of *Protobothrops mangshanensis* (Zhao, 1990) (CIB 098485).

***Viridovipera medoensis* (Zhao, 1977)**

Published name: *Trimeresurus medoensis* Zhao, 1977 in Zhao E. M. and Jiang Y. M. 1977. Acta Zool Sin, Peking, 23(1): 64–71.

Holotype: CIB 013612 (formerly CIB 73II5208), Male. (Figure 5)

Type locality: Near A-ni Bridge, Motuo Co., Xizang AR, China.

Allotype: CIB 013611, Male.

Distribution: Motuo Co., Xizang, China.

Comments: Malhotra and Thorpe (2004) moved this species from *Trimeresurus* to the newly erected genus *Viridovipera* as *V. medoensis*.

***Viridovipera stejnegeri chenbihuii* (Zhao, 1995)**

Published name: *Trimeresurus stejnegeri chenbihuii* Zhao, 1995. Sichuan J Zool, Chengdu, 14(3): 107–112.

Holotype: CIB 013898 (formerly CIB 64III5599), Male. (Figure 6)

Type locality: Diaoluoshan, Lingshui Co., Hainan Province, China.

Allotype: CIB 013891, Female.

Distribution: Hainan, China.

Other specimens (28): Lingshui Co., Hainan (CIB series 013885–89, 013894–897, 013899–913, 013915); Qiongzong, Hainan (CIB series 013888, 013890, 013892–93, 013914, 078044).

Comments: Malhotra and Thorpe (2004) moved the species *Trimeresurus stejnegeri* to the newly described genus *Viridovipera* as *V. stejnegeri chenbihuii*. This subspecies is maybe not a valid subspecies based on recent phylogenetic studies (Guo *et al.* unpubl. data)

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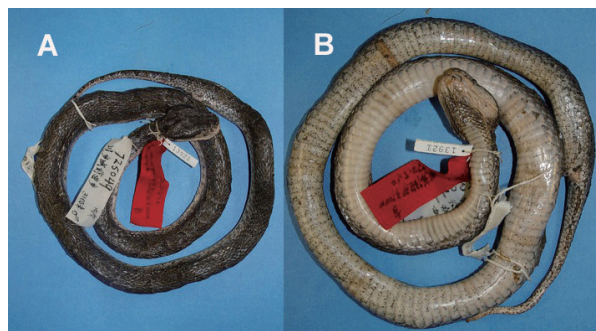


Figure 4 Dorsal (A) and ventral (B) views of the holotype of *Protobothrops xiangchengensis* (Zhao, Jiang and Huang, 1978) (CIB 013918).

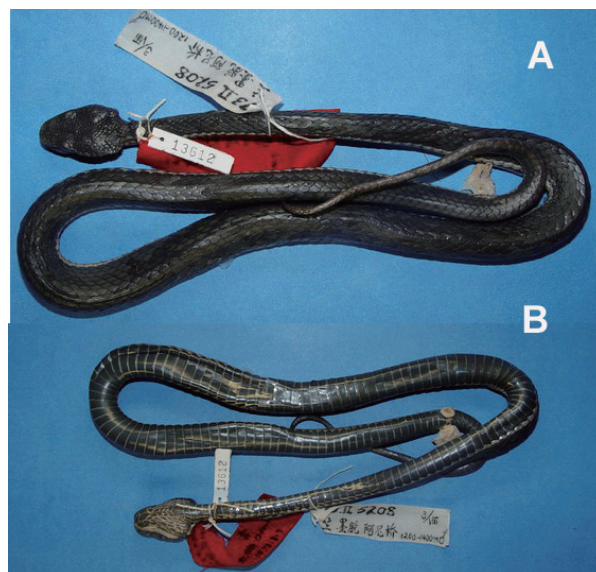


Figure 5 Dorsal (A) and ventral (B) views of the holotype of *Viridovipera medoensis* (Zhao, 1977) (CIB 013612).



Figure 6 Dorsal (A) and ventral (B) views of the holotype of *Viridovipera stejnegeri chenbihuii* (Zhao, 1995) (CIB 013898).

Table 4 The body dimension and measurement of the type specimens of *Viridovipera medoensis* (from Zhao and Jiang, 1977).

| Specimens | Locality | Sex | SVL | TL | SPL | IFL | DS | VS | SC |
|------------|---------------|-----|-----|-----|-----|-----|----------|-----|----|
| CIB 013612 | Motuo, Xizang | ♂ | 563 | 129 | 8 | 9 | 17-17-13 | 149 | 59 |
| CIB 013611 | Motuo, Xizang | ♂ | 509 | 115 | 8 | 9 | 17-17-13 | 148 | 58 |

Table 5 The body dimension and measurement of the specimens of *Viridovipera stejnegeri chenbihuii*.

| Specimens | Locality | Sex | SVL | TL | SPL | IFL | DS | VS | SC |
|-----------|-------------------|-----|-----|-----|-------|-------|----------|-----|----|
| CIB013885 | Lingshui, Hainan | ♂ | 595 | 150 | 9/11 | 14/12 | 21-21-15 | 174 | 73 |
| CIB013886 | Lingshui, Hainan | ♂ | 600 | 150 | 11 | 13/14 | 21-21-15 | 170 | 73 |
| CIB013887 | Lingshui, Hainan | ♂ | 605 | 145 | 12 | 14/13 | 21-21-15 | 177 | 73 |
| CIB013888 | Qiongzong, Hainan | ♂ | 595 | 145 | 11 | 14/13 | 23-21-15 | 174 | 75 |
| CIB013889 | Lingshui, Hainan | ♂ | 595 | 145 | 11 | 13 | 21-21-15 | 171 | 73 |
| CIB013890 | Qiongzong, Hainan | ♂ | 610 | 150 | 11 | 12/13 | 21-21-15 | 172 | 73 |
| CIB013891 | Lingshui, Hainan | ♀ | 545 | 75 | 10/11 | 14 | 21-21-15 | 173 | 67 |
| CIB013892 | Qiongzong, Hainan | ♂ | 656 | 167 | 11 | 13 | 21-21-15 | 173 | 77 |
| CIB013894 | Lingshui, Hainan | ♀ | 537 | 108 | 11 | 12 | 21-21-15 | 171 | 66 |
| CIB013896 | Lingshui, Hainan | ♂ | 518 | 122 | 12 | 13 | 21-21-15 | 170 | 72 |
| CIB013897 | Lingshui, Hainan | ♂ | 570 | 130 | 12 | 13/12 | 21-21-15 | 172 | 71 |
| CIB013898 | Lingshui, Hainan | ♂ | 565 | 150 | 11 | 12 | 21-21-15 | 171 | 80 |
| CIB013903 | Lingshui, Hainan | ♂ | 580 | 150 | 10/11 | 14/13 | 21-21-15 | 169 | 74 |

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